GX-280

OPERATOR'S MANUAL

3-HEAD 3-MOTOR AUTOMATIC REVERSE
STEREO TAPE RECORDER

SERVO CONTROL

THIS MANUAL IS ALSO APPLICABLE TO
MODEL GX-280D STEREO TAPE DECK

AKAI®

MANUFACTURED & DISTRIBUTED BY AKAI ELECTRIC CO., LTD./AKAI TRADING CO., LTD.

INDEX

Controls 2
4-Track Recording & Playback System 5
  Stereo Recording & Playback 5
  Monaural Recording & Playback 5
Voltage & Cycle Conversion 5
  Voltage 5
  Cycle 5
Operating Instructions 6
Tape Loading 6
Tape Speed Selection 6
Pause Control 7
Automatic Stop & Shut-Off 7
Fast Forward & Rewind 7
Direct Function Change Control 7
Monitoring 7
Remote Control 7
Automatic & Manual Reverse Playback 8
Din Jack 8
Playback 9
  Stereo Playback 9
  Monaural Playback 9
Recording 10
  S.R.T. Switch 10
  Stereo Recording 10
  Monaural Recording 10
  Recording from an External Amplifier 11
  Recording from a Turntable 11
Tape Dubbing 11
Sound-On-Sound Recording 12
Sound Mixing 13
Tape Splicing & Editing 13
Tape Erasing 13
Head Demagnetizing 13
Playback using model GX-280D Tape Deck 14
  Stereo Playback 14
  Monaural Playback 14
Technical Data 15
Standard Accessories 16
Optional Accessories 16

CONTROLS

Front Panel Controls

INDEX COUNTER

For use in locating positions on a tape. With Reset Button, set Index Counter to "0000" before beginning recording or playback.

REEL RETAINER

SUPPLY REEL TABLE

RECORD INDICATOR LAMP

Recording mode indicator lamp. When Record and Forward Buttons are depressed (recording mode is effected), this Record Indicator Lamp will light.

TRACK SELECTOR BUTTONS

1-4/Stereo/3-2 Buttons show respective markings above each button. Easy selection of proper track for recording or playback operation.

SENSING POLE (Left)

During Playback operation, when the tape is being reversed from ◄ to ►, such automatic reverse is effected when the sensing tape (affixed to the magnetized tape surface) comes in contact with this sensing pole.

SOUND REFLECTOR

SPEAKER (Left)

TENSION ARM

The Tension Arm not only works to correct tape slack, but also stabilizes tape speed. As the tape advances, stabilized tension is applied and tape vibration is eliminated.

PAUSE BUTTON

Convenient for use in temporarily suspending tape movement during recording or playback operation. Turning button to right locks it into pause position.

AUTOMATIC SHUT-OFF BUTTON

The Automatic Shut-Off Button is linked to the Automatic Shut-Off Lever. If this button is at depressed position, when the tape comes to the end or is broken, the power of the entire unit is cut off. A convenient safety feature in case the recorder is left unattended.

POWER SWITCH

TAPE SPEED SELECTOR BUTTONS

7-1/2 (19 cm/s) and 3-3/4 (9.5 cm/s) Speed Selector Buttons. Feather touch for easy selection of desired speed.

MICROPHONE RECORDING LEVEL CONTROLS (Left/Right)

When using microphones for recording, adjust input with these controls while observing VU Meters.

MICROPHONE JACKS (Left/Right)

When using microphones for recording, insert microphone plugs into these jacks. Left jack is for left channel recording and right jack for right channel recording.

HEADPHONE JACK

LINE RECORDING LEVEL CONTROLS (Left/Right)

For use in adjusting line recording input level. Adjust while observing VU Meters.

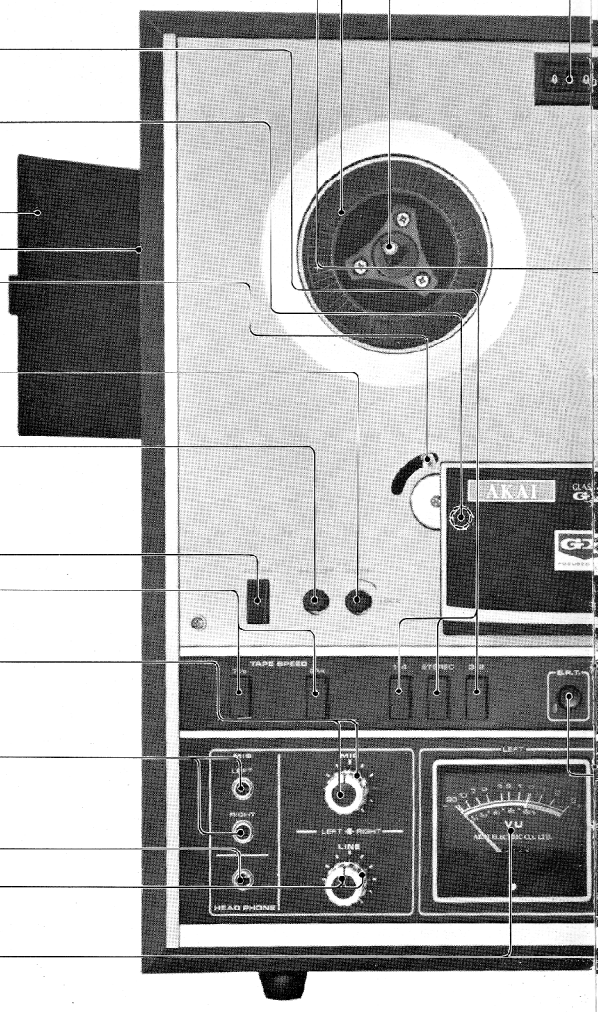
VU METERS (Left/Right)

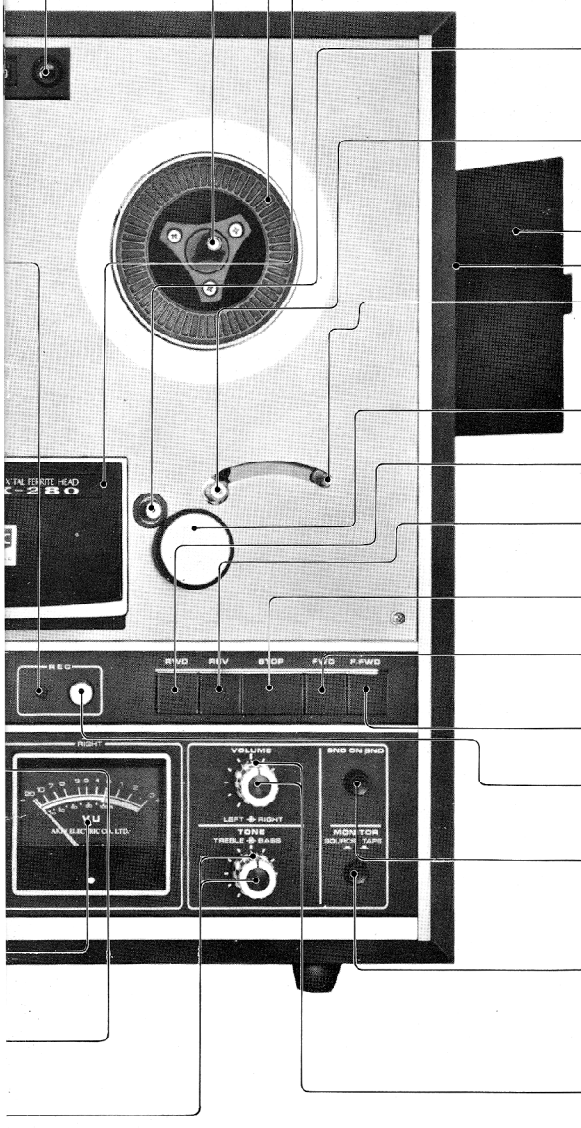
These meters indicate recording and playback levels (Left meter, left channel level and right meter, right channel level). Normal recording level should not exceed white zone on VU Meters ("0" VU).

S.R.T. SWITCH

Depress when using AKAI S.R.T. (Super Range Tape) or other make low noise tapes.

TONE CONTROLS (Left/Right)





RESET BUTTON

REEL RETAINER

Lock reels into place with these built-in reel retainers. Pull tip of retainers outward and turn to left or right to firmly lock reels into place.

TAKE-UP REEL TABLE

HEAD COVER

Head cover houses (from left to right) Erase, Recording, Playback and Reverse Playback Heads.

CAPSTAN

Transports tape at consistent speed. The GX-280 (D) employs a high efficiency Servo Circuit Motor for direct capastan drive, resulting in complete tape speed stability.

SENSING POLE (Right)

Fos reversing tape from ▭ to ◂▭ direction during playback operation. Such Automatic Reverse is effected when the sensing tape (previously affixed to outer edge of tape surface) comes in contact with this sensing pole.

SOUND REFLECTOR

SPEAKER (Right)

AUTOMATIC SHUT-OFF LEVER

At the end of the tape (or when the tape is broken), the Automatic Shut-Off Lever is released and tape movement is stopped. If the Shut-Off Button is at depressed position, when the Automatic Lever is released, the power of the entire unit is cut off.

PINCH WHEEL

Presses against capstan to transport tape.

REWIND BUTTON

For use in rewinding tape from right to left reel at high speed.

REVERSE BUTTON

For effecting Manual Reverse and Reverse Playback. Sensing tape is used for automatic reverse.

STOP BUTTON

Depress to stop tape travel (releases pinch wheel).

FORWARD BUTTON

Used to advance tape in forward direction. For recording mode, depress Record Button and Forward Button.

FAST FORWARD BUTTON

For advancing tape in forward direction at high speed.

RECORD BUTTON

For effecting recording mode, depress this Record Button before the Forward Button. Check Record Indicator Lamp to confirm recording mode.

SOUND-ON-SOUND BUTTON

Use for language study, compile a duet from a single voice, or use for any number of other interesting Sound-On-Sound operations. Depress this button for second and subsequent recordings (see Sound-On-Sound section of this manual).

MONITOR SWITCH

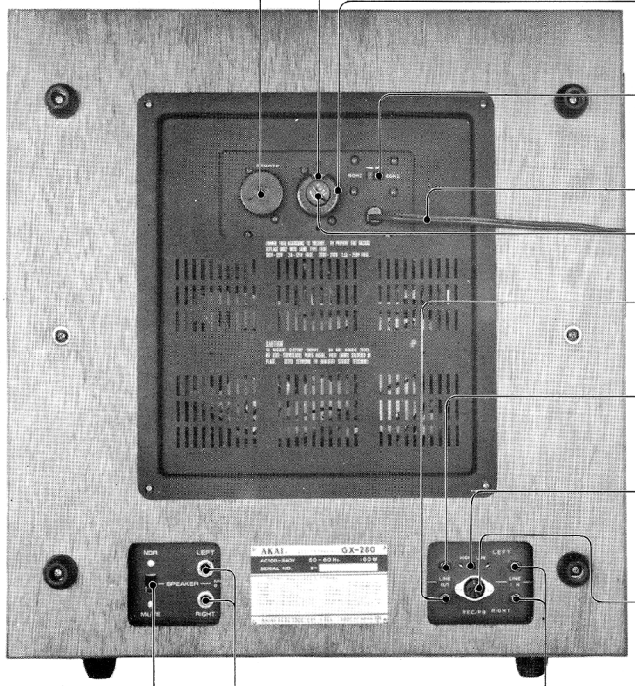
During recording mode, when Monitor Switch is at "Tape" position, the signals can be monitored as the tape passes the playback head. When at "Source" (in) position, the program source is being recorded. When erasing, or for private listening during playback mode, Monitor Switch should be kept at "Tape" (out) position.

VOLUME CONTROLS (Left/Right)

For adjustment of sound level during playback mode.

Fig. 1

Back Panel Controls



REMOTE CONTROL JACK

For connection of AKAI Remote Control Unit RC-16. Enables distant remote control of Recording, Playback, Stop, Fast Forward, Rewind, and Reverse modes.

VOLTAGE INDICATOR PLATE

Indicates six stages of voltage (100/110/120/200/220/240 V). Set Voltage Selector Plug so that proper area voltage appears through the cut-out window of plug.

VOLTAGE SELECTOR PLUG

In case of necessity to change voltage, remove fuse post and plug and set plug to proper voltage.

CYCLE CONVERSION SWITCH

This switch must be set in accordance with area power source. Set to 50 Hz or 60 Hz as required.

AC CORD

FUSE POST

When changing voltage, it is also necessary to change the fuse accordingly.

LINE OUTPUT JACK (Right)

For playback, connect this jack with the Tape In Jack (right) or Aux Jack (right) of external stereo amplifier.

LINE OUTPUT JACK (Left)

For playback, connect this jack with Tape In Jack (left), or Aux Jack (Left) of external stereo amplifier.

DIN JACK HIGH/LOW INPUT SWITCH

When using Din Jack connection, if output level of external amplifier is more than 50 mV, set this switch to "High", and if output level is less than 50 mV, set to "Low".

DIN JACK

Enables inter-connection with an external stereo amplifier by use of a single Din Cord. (When using Din Cord for recording, recording level is adjusted with MIC Record Level Controls).

LINE INPUT JACK (Left/Right)

When recording from an external tuner or record player, connect the Output Jacks of external source to these Input Jacks.

SPEAKER JACKS (Left/Right)

SPEAKER SWITCH

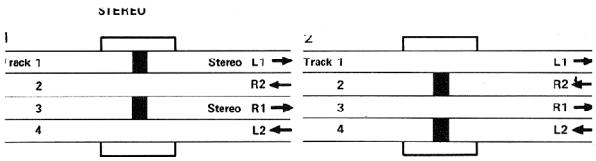
Set to "NORMAL" when sound from speakers is desired, and to "MUTE" when sound is not desired or when using stereo headphones for private listening.

Fig. 2

4-TRACK RECORDING & PLAYBACK SYSTEM

The GX-280(D) employs a 4-track system which can be used for either stereo or monaural. Select desired track(s) with the Track Selector provided on the front panel.

STEREO RECORDING & PLAYBACK



Stereo recording and playback requires the simultaneous use of two tracks. For stereo operation, set Track Selector to STEREO position. The first stereo playback and recording takes place on tracks 1 and 3. The second playback takes place on tracks 2 and 4, after the machine has been set to reverse mode or the reels have been inverted. To record on tracks 2 and 4 invert reels.

MONAURAL RECORDING & PLAYBACK

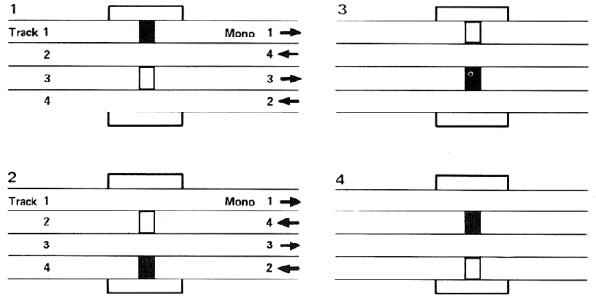


Fig. 3

Monaural recording and playback track sequence is 1-4-3-2.

1. Set Track Selector to LEFT position. The first monaural recording and playback takes place on track 1, and the second on track 4 after the reels have been inverted.
2. Invert reels.
3. Set Track Selector to RIGHT position. The third monaural recording and playback takes place on track 3, and the fourth on track 2 after the reels have been inverted.

Model GX-280(D) does not record in reverse direction. For reverse playback, use sensing tape for automatic reverse or the Reverse Button provided on the front panel for manual reverse (or invert reels).

VOLTAGE & CYCLE CONVERSION

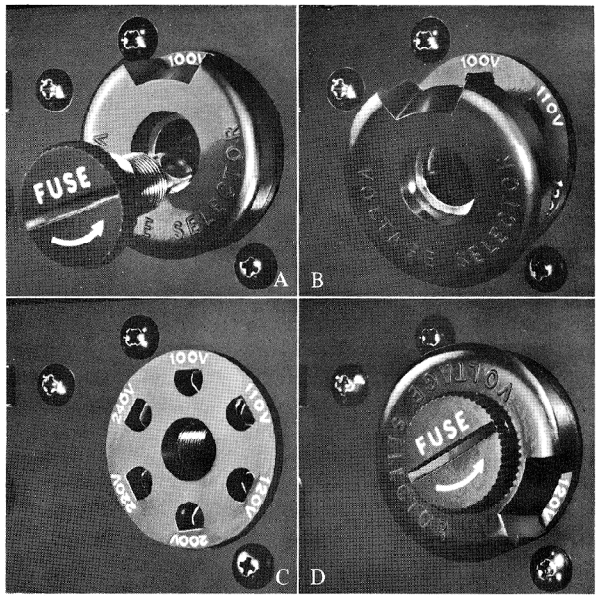


Fig. 4

Voltage

Your equipment is normally adjusted to operate as per voltage and cycles printed on the rear panel of your unit. However, the operator is requested to check the previously set voltage and cycle setting prior to operation. If readjustment is necessary, please proceed as follows :

1. Remove the Fuse Post by turning it counter-clockwise. Remove the Voltage Selector Plug and reset to area voltage. The Voltage Selector is a rotable plug-in type offering six selections : 100/110/120/200/220/240 V A.C.
2. Change fuse according to voltage :
   (GX-280) : 100 V to 120 V 2 A 125 V
   200 V to 240 V 1.5 A 250 V
   (GX-280D) : 100 V to 120 V 1.5 A 125 V
   200 V to 240 V 1 A 250 V

Caution : Be sure to disconnect the power cord before attempting to readjust the voltage. To maintain optimum performance and to prolong the life of your machine it is imperative that the line voltage be held within 10% deviation of standard area voltage.

Cycles

Correct tape speed cannot be obtained if the Cycle Conversion Switch located on rear panel is not properly set. For 50 Hz operation, set Switch to 50 Hz, and for 60 Hz operation, set to 60 Hz position.

OPERATING INSTRUCTIONS

Model GX-280(D) is constructed of the finest materials and with proper care will bring you many years of musical listening pleasure. We, therefore, strongly urge you to read this manual thoroughly before attempting operation. The following conditions do not necessarily show mechanical failure of your unit. If your machine exhibits any of these conditions check for trouble as indicated.

Loss of sensitivity or tone quality

* A.C. Power voltage lower than the voltage to which your machine is adjusted.
* Magnetized head.
* Excessively high or low recording input level.

Machine will not record or play

* Check positions of controls, input and output connections and plugs.
* Incorrect tape loading.
* Machine is set to automatic shut-off or stop, or to pause mode.

Irregularity in tape transport

* Oil on capstan.
* Sticky or dirty tape surface.
* Bent reels.
* Improperly loaded tape.

Will not reverse play

* Improperly affixed sensing tape.

Place the GX-280(D) on any flat horizontal surface, and operate on either horizontal or vertical position. Do not set anything on the top of your machine which will obstruct the ventilator. The front panel of your recorder may become rather hot during operation ; however, this is normal.

TAPE LOADING

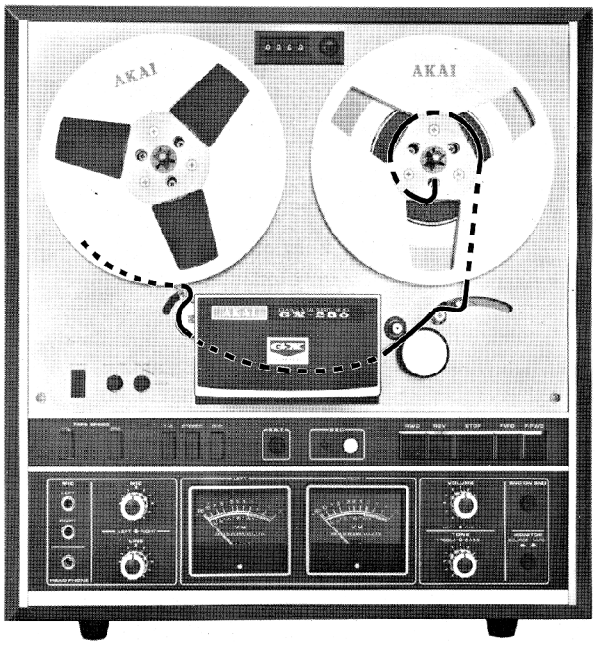


Fig. 5

Place a full reel of tape on Supply Reel Table and an empty reel on the Take-up Reel Table. Thread the tape as illustrated by the dotted line in the figure. Lock reels into place with the reel retainers provided on reel shafts. In case automatic shut-off is desired, be sure to thread tape through the Automatic Shut-Off Lever.

TAPE SPEED SELECTION

RECORDING TIME

TAPE LENGTH	TAPE SPEED			
	4-TRACK STEREO		4-TRACK MONAURAL	
	9.5 cm/sec (3-3/4 ips)	19 cm/sec (7-1/2 ips)	9.5 cm/sec (3-3/4 ips)	19 cm/sec (7-1/2 ips)
1800 ft	3 hours	1.5	6	3

Fig. 6

The GX-280(D) operates on two tape speeds ; 19 cm/sec (7-1/2 ips), 9.5 cm/sec (3-3/4 ips). For selection of tape speed, simply depress Tape Speed Button according to the required speed.

PAUSE CONTROL

One of the exclusive features of the GX-280(D) is the ability to momentarily stop the tape during recording or playback. Also convenient for editing tapes. Use when certain portions of the program are not desired. After the Pause Button has been depressed, it can be locked into position by turning it to the right.
CAUTION : Pause control does not function during fast forward or rewind operation.

AUTOMATIC STOP & SHUT-OFF

One of the exclusive features of the GX-280(D) is the automatic stop and shut-off function of the unit. For automatic stop (to stop reel movement at end of tape), leave the Automatic Shut-Off Button at OUT position. For automatic shut-off (to cut off the power of the entire unit at end of tape) depress the Automatic Shut-Off Button. If shut-off is desired after one complete reverse cycle, affix sensing tape (outside the tape) at desired reversing point) and depress the Shut-Off Button. If automatic continuous reverse is desired, apply sensing tape (outside the tape for normal playback to reverse and inside the tape for reverse to normal playback) at desired reversing points and leave the Shut-Off Button at OUT position. In this case, if Shut-Off Button is depressed, automatic shut-off will be effected at end of one complete reverse cycle (the power of the entire unit will be cut off).

FAST FORWARD & REWIND

To effect fast forward or rewind, depress F.FWD or RWD Button of control panel. Use Stop Button to stop either of these operations.

DIRECT FUNCTION CHANGE CONTROL

Your unit features a completely automatic function change control system for easy and speedy changing of operating modes. It is not necessary to depress Stop Button before changing modes.

MONITORING

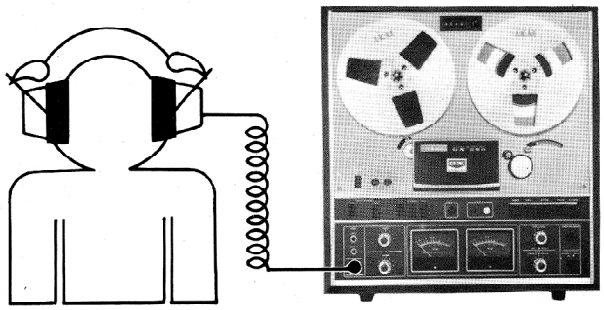


Fig. 7

For monitoring program source during recording, set Monitor Switch to SOURCE position. If the Monitor Switch is set to TAPE position, the recorded signals can be monitored as the tape passes the playback head. When headphones are used for private listening, the Switch must be set to TAPE position, and the Speaker Switch to MUTE position.

REMOTE CONTROL

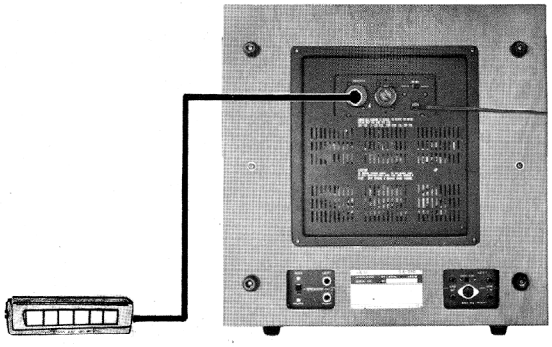
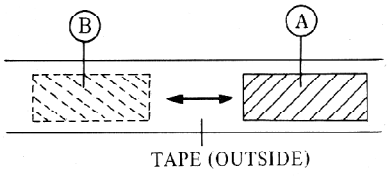


Fig. 8

All operating functions of the GX-280(D) can be remote controlled by using Akai Remote Control unit RC-16 optional accessory. Plug in remote control connector to the socket provided on rear panel.

AUTOMATIC & MANUAL REVERSE PLAYBACK



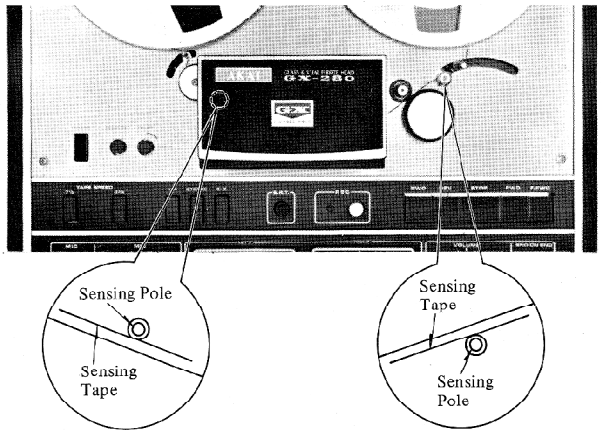


Fig. 9

For automatic reverse playback, affix about a 2 cm (1/2") long piece of metallic sensing tape to the outside of the recorded tape at desired reversing point. If continuous reverse between two points is desired, affix another piece of sensing tape to the inside of the recorded tape at desired reversing point. Normally, it is recommended that the sensing tape be affixed at both ends (outside the recorded tape for normal to reverse playback, and inside the recorded tape for reverse to normal playback) of the recorded tape. As the sensing tape passes the Sensing Poles, reverse is effected. This Akai reversing system differs from ordinary reversing systems in that when reverse is being effected, the motor revolutions are reversed and the Pinch Wheel automatically separates from the Capstan , suspending reel movement momentarily until the exact tape speed to which the recorder is set is reached. At this time, the pinch wheel again automatically contacts the capstan and the tape begins to travel. Thus, tape speed is always accurately maintained and annoying noise as the tape reverses is completely eliminated.

The GX-280(D) is also equipped with a manual Reverse Button for your convenience. Reverse playback can be effected at any point by simply depressing this button.

DIN JACK

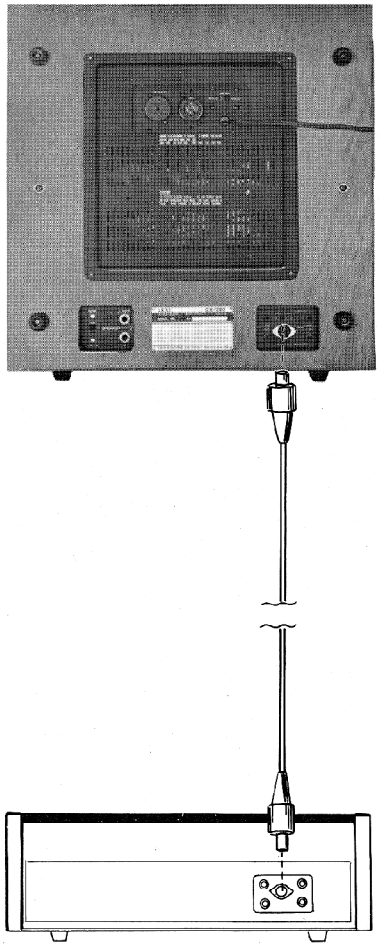


Fig. 10

The DIN Jack at the rear of the recorder is used for inter-connecting the GX-280(D) with an external stereo amplifier. This system enables easy recording or playback through an external amplifier as the complex connection or disconnection of four separate plugs is not necessary. When recording from an external amplifier, if the output level of the amplifier is more than 50 mV, set the High/Low Input Switch to HIGH. If the output level is less than 50 mV, set to LOW.

Note : When using Din Cord connection, VU level is controlled with the Microphone Recording Level Controls.

PLAYBACK

Please check the following prior to operation.

* As tapes which have not been used for a period of time may have become sticky, run once before using.
* Tape is loaded properly.

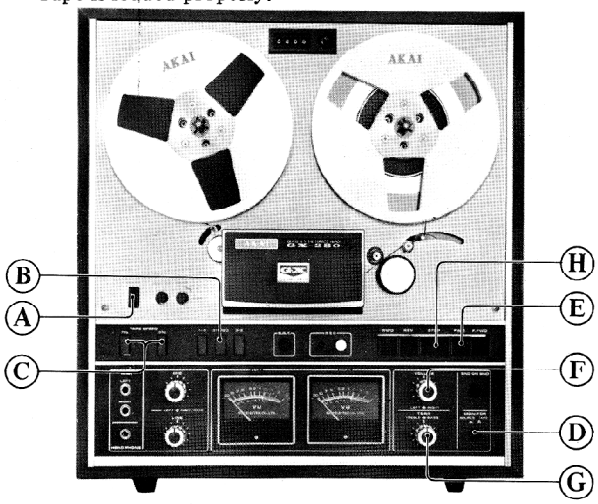


Fig. 11

Stereo Playback

Connect power cord and load a pre-recorded tape.

A. Turn on Power Switch.
B. Depress STEREO Track Selector Button
C. Depress Speed Selector Button according to the desired speed.
D. Set Monitor Switch to TAPE position.
E. Depress Forward Button to begin tape playback.
F. Adjust Left and Right Volume Controls.
G. Adjust Tone Controls.
H. To stop playback depress Stop Button.

Monaural Playback

Only the left channel is used for monaural playback on Tracks 1 and 4. Substitute the following steps for steps B and F of stereo playback procedure.

B. Depress 1-4 Track Selector Button.
F. Adjust Left Volume Control.

Only the right channel is used for monaural playback on Tracks 3 and 2. Substitute the following steps for steps B and F of stereo playback procedure.

B. Depress 3-2 Track Selector Button.
F. Adjust Right Volume Control.

* Your GX-280 is equipped with two speakers. However, if a more dynamic sound is required, make connections as shown in figure.

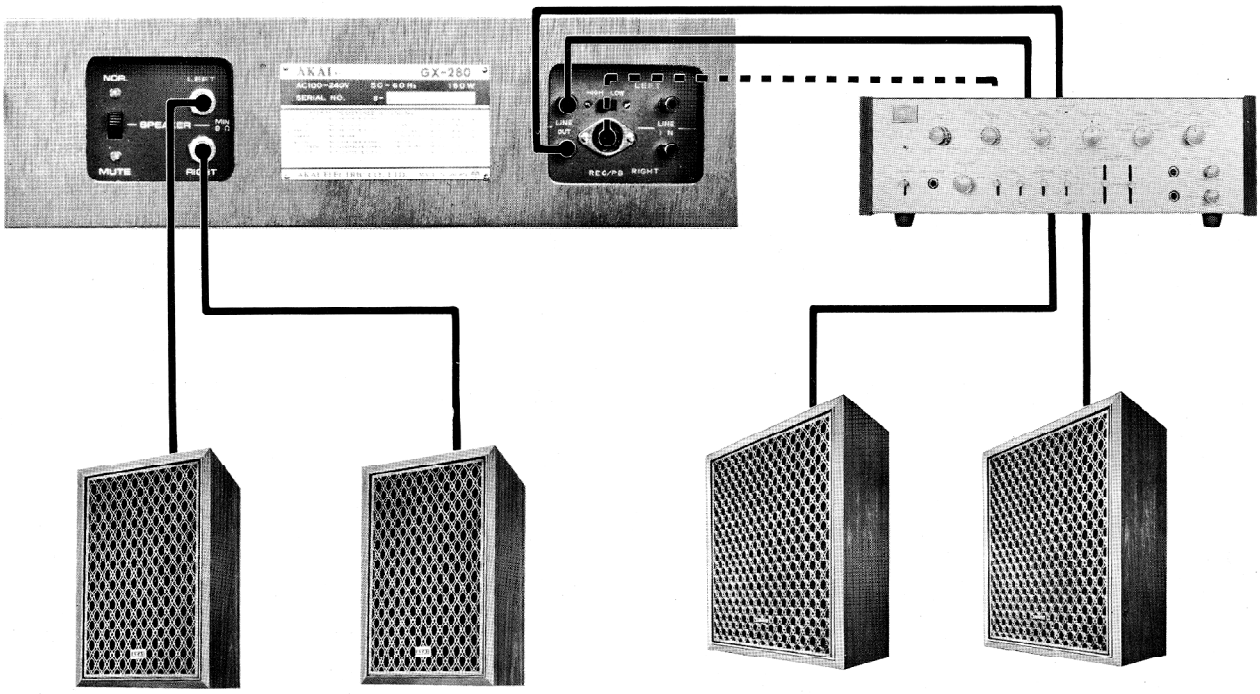


Fig. 12

RECORDING

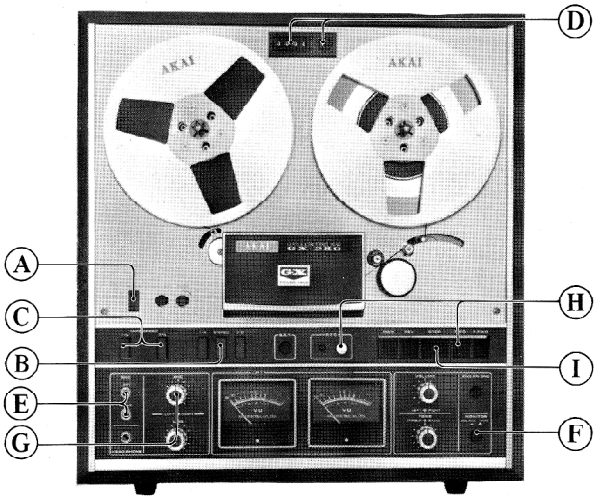


Fig. 13

Please check the following prior to operation.

* Heads are demagnetized.
* Use good quality tape. New tapes give best results.
* As tapes which have not been used for a period of time may have become sticky, run once before using.
* Tape is loaded properly.

S.R.T. SWITCH

Model GX-280(D) is equipped with an SRT Switch. This switch brings out the maximum response of high performance low noise tapes and works to change the recording equalizations according to the tape. The combination of Akai's GX-HEAD and the Super Range Tape has enabled startling progress in tone quality. In other words, eventhough the GX-280(D) provides a high frequency response covering 24,000 Hz with standard tape, this is extended to an amazing 26,000 Hz when Akai's super range tape or other make low noise tapes are used.

Stereo Recording

Connect power cord and load a tape.

A. Turn on Power Switch.
B. Depress STEREO Track Selector Button.
C. Depress Speed Selector Button according to desired speed.
D. With Reset Button, set Index Counter to 0000. This Index Counter provides an easy reference for locating positions on the tape.
E. Insert microphone plugs into Microphone Jacks. Maintain at least two meters (7 ft.) between microphones.
F. Set Monitor Switch to SOURCE position.
G. Adjust and balance microphone input level with the Microphone Recording Level Controls while observing Left and Right VU Meters. Normal recording should not exceed zero VU on either VU Meter.
H. When an optimum recording level has been determined, depress Recording Button and Forward Button to begin recording. Note that when recording, the recording indicator lamp is lit.
I. To stop recording, depress Stop Button.

Note : Tone Control has no effect during recording.

Monaural Recording

For monaural recording, substitute the following steps for steps B, E, and G of stereo recording procedure and add step J.

- Only the left channel is used for monaural recording on tracks 1 and 4.

B. Depress 1-4 Track Selector Button.
E. Insert microphone plug into Left Microphone Jack.
G. Adjust and balance microphone input level with Left Microphone Recording Level Control while observing Left VU Meter. Normal recording should not exceed zero VU on VU Meter.
H. Invert reels to record on track 4.

- Only the right channel is used for monaural recording on tracks 3 and 2.

B. Depress 3-2 Track Selector Button.
E. Insert microphone plug into Right Microphone Jack.
G. Adjust and balance microphone input level with Right Microphone Recording Level Control while observing Right VU Meter. Normal recording should not exceed zero VU on VU Meter.
J. Invert reels to record on track 2.

Recording from an External Amplifier

If an external amplifier or tuner amplifier is used, connect the Tape Outputs of external amplifier to the Line Inputs in step E of recording procedure. VU level is controlled with the Line Recording Level Controls. Model GX-280(D) will record any source which can be selected on the external amplifier.

Important : If the DIN Jack is used for connecting to the recorder, VU level is controlled with the Microphone Recording Level Controls.

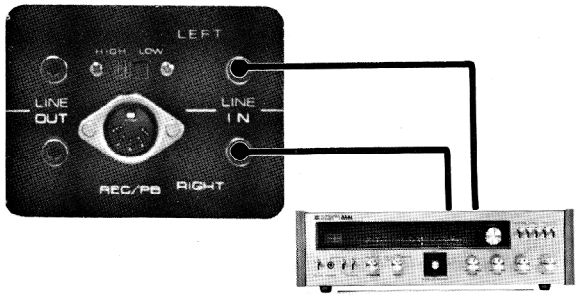


Fig. 14

Recording from a Turntable

To record from a stereo or monaural turntable, a crystal pick-up or a ceramic pick-up can be connected directly to the Line Inputs in step E of recording procedure. If a magnetic cartridge is used, it must be connected to the Line Inputs through a separate pre-amplifier or external amplifier. VU level is controlled with the Line Recording Level Controls.

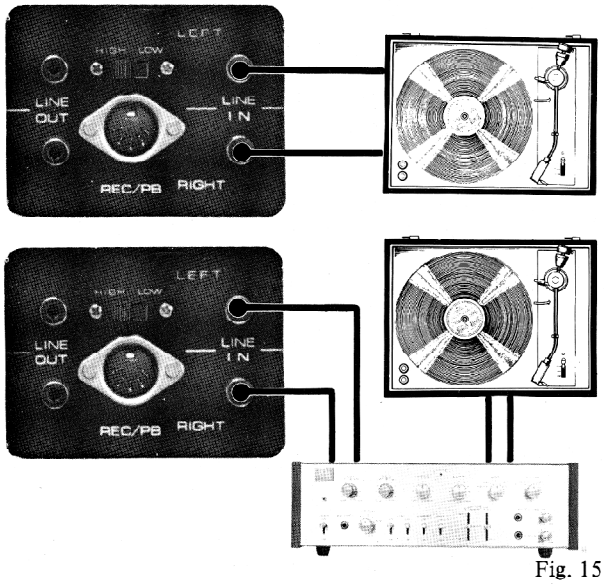


Fig. 15

TAPE DUBBING

When dubbing from another tape recorder, connect the Line Outputs or External Speaker Jacks of playback machine to the Line Inputs instead of step E of recording procedure. VU level is controlled with the Line Recording Level Controls.

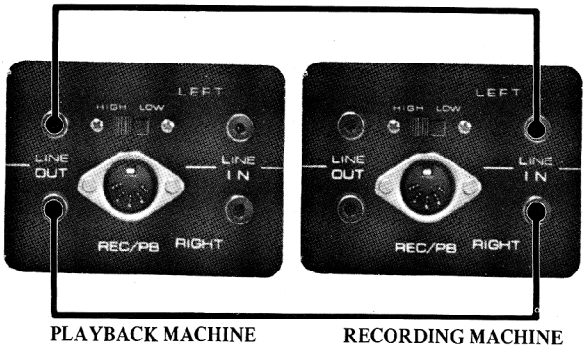


Fig. 16

SOUND-ON-SOUND RECORDING

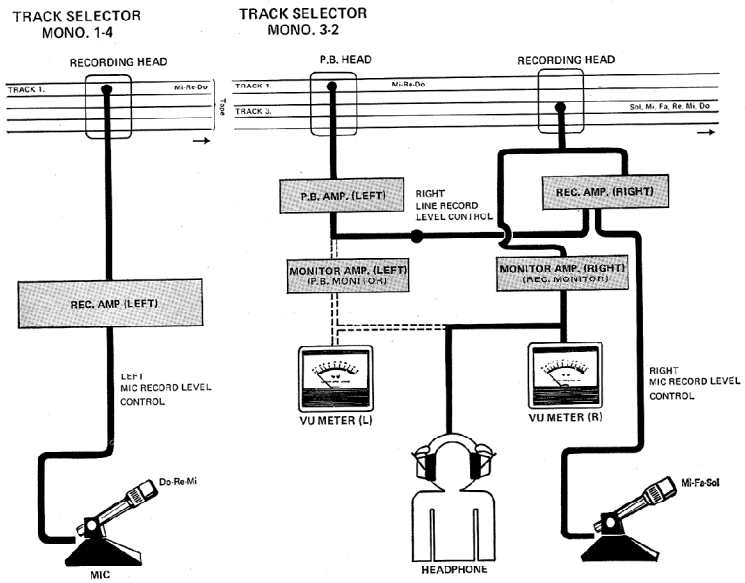


Fig. 17

For transfer of previously recorded material from one track to the other, accumulating as many individual recordings on one track as is desired. Can be applied to language training, musical compilations and various other uses.

First Recording

1. Confirm that there are no connections to the Line Input Jacks.
2. Depress 1-4 Track Selector Button for recording on track 1.
3. Insert microphone plug into Left Microphone Jack.
4. Depress Monitor Switch to SOURCE position.
5. Depress Record Button and Forward Button simultaneously to begin first recording ; i.e., Do-Re-Mi.
6. Adjust the Left Microphone Recording Level Control while observing the Left VU Meter.
7. When the first recording is completed, rewind tape to starting position.

Second Recording

8. Confirm that Monitor Switch is at SOURCE position and depress Sound-On-Sound Button.
9. Depress 3-2 Track Selector Button for recording on track 3 while listening to track 1.
10. Insert microphone plug into Right Microphone Jack.
11. Increase Line Recording Level Control to approximately maximum.
12. Connect Stereo Headphones for monitoring the first recording on track 1.
13. Depress Record Button and Forward Button simultaneously to begin second recording ; i.e., Mi-Fa-Sol. First recording is head through headphones.
14. Adjust Right Microphone Recording Level Control while observing the Right VU Meter. As the second recording Mi-Fa-Sol is made on track 3, the first recording Do-Re-Mi is monitored in headphones. The two recordings will be completely merged on track 3 ; i.e., Do-Mi-Re-Fa-Mi-Sol.
15. The third and subsequent recordings are made in the same as the second recording by alternating tracks 1-4 and 3-2.
16. For playback, if last recording is made on track 1-4, depress 1-4 Track Selector Button. If last recording on track 3-2, depress 3-2 Track Selector Button.

Note : Be Sure to keep Volume Control at minimum when recording in order to avoid howl.

SOUND MIXING

For mixing microphone and line input signals, proceed as follows :

1. Insert microphone plug(s) into microphone jack(s) and connect line outputs of the external source to line input of model GX-280(D).
2. Adjust microphone volume level with Microphone Recording Level Controls and line input level with Line Recording Level Controls.

Mixing can also be effected by using the DIN Jack and Line Input connections simultaneously. For playback, operate Track Selector Buttons according to tracks used in making recordings.

TAPE SPLICING & EDITING

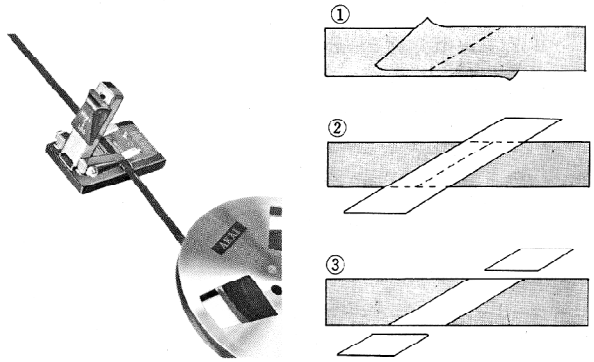


Fig. 18

Cut tape diagonally with an overlap so that the ends are lined up (cutting tape on diagonal eliminates detection of splice in recording). Cover aligned ends with splicing tape. Press firmly exerting pressure to secure ends evenly. Trim off excess splicing tape cutting into splicing tape very lightly as illustrated by the dotted lines in figure. This eliminates the possibility of a sticky splice. Splicing of tape using scissors requires skillful work. For easy and smooth tape splicing, we recommend Akai Tape Splicer model AS-3.

TAPE ERASING

Any signal information previously recorded on a tape will be erased automatically as a new recording is made on the same tape. For erasing only, thread the tape and set machine to recording mode. No plugs should be connected to the recorder's input jacks and volume controls should be kept at minimum. Akai's Tape Eraser model ATE-7 is recommended for quick and complete erasure.

HEAD DEMAGNETIZING

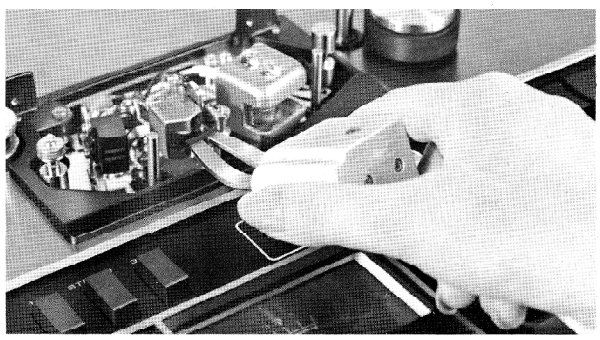


Fig. 19

Normally the steel pole pieces which form part of the recording and playback heads become slightly magnetized. The effect of magnetization is that it partially erases the tape, especially at high frequencies. Severe magnetization which may be caused by using magnetized tools in the vicinity of the heads, will result in noise or considerable distortion in addition to the loss of high frequency response. Although this model already has a built-in head demagnetizing circuit, it is recommended that demagnetization be performed periodically. This can be accomplished by touching the heads very lightly with the prongs of the demagnetizer and making several small circular movements over all head surface areas as well as the head housing. Akai Head Demagnatizer model AH-8 is highly recommended for perfect demagnetization.

PLAYBACK USING MODEL GX-280D TAPE DECK

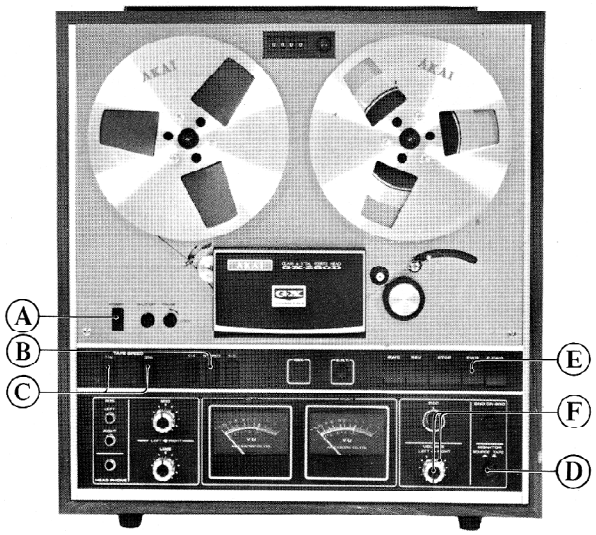


Fig. 20

Please check the following prior to operation.

* As tapes which have not been used for a period of time may have become sticky, run once before using.
* Tape is loaded properly.

Model GX 280D does not include power amplifiers or speakers. It is, therefore, necessary to provide an external amplifier and a pair of speakers for playback.

Connect the Line Outputs to the Tape Inputs of the external stereo amplifier and connect two speakers to the amplifier.

Connect power cord and load a tape.

Stereo Playback

A. Turn on Power Switch.
B. Depress STEREO Track Selector Button.
C. Depress Speed Selector Button according to desired speed.
D. Set Monitor Switch to TAPE position.
E. Depress Forward Button to begin tape playback.
F. Adjust Left and Right Volume Controls of the GX-280D and Volume Controls etc. of the external stereo amplifier.

Monaural Playback

Only the left channel is used for monaural playback on tracks 1 and 4. Connect the Left Line Output of the GX-280D to the Left Tape Input or Aux Jack of the external amplifier and connect a speaker to the Left Output terminal of the external amplifier. Substitute the following steps for steps B and F of the stereo procedure.

B. Depress 1-4 Track Selector Button.
F. Adjust Left Volume Control of the GX-280D and the Left Volume Control etc. of the external amplifier.

Only the right channel is used for monaural playback on tracks 3 and 2. Connect the Right Line Output of the GX 280D to the Right Tape Input or Aux Jack of the external amplifier and connect a speaker to the Right Output terminal of the external amplifier. Substitute the following steps for steps B and F of the stereo procedure.

B. Depress 3-2 Track Selector Button.
F. Adjust Right Volume Control of the GX-280D and Right Volume Control etc. of the external amplifier.

FOR RECORDING WITH MODEL GX-280D, PLEASE REFER TO PAGES 10 to 13.

TECHNICAL DATA

Track System	4-track 2-channel stereo/monaural GX-Head focused-field recording system
Maximum Reel Capacity	7" reel
Tape Speed	7-1/2 and 3-3/4 ips (±0.5%)
Wow & Flutter	Less than 0.08% RMS at 7-1/2 ips Less than 0.12% RMS at 3-3/4 ips
Equalization	Correct equalization for playback of tapes recorded to NAB curve
Frequency Response	30 to 26,000 Hz (±3 dB) at 7-1/2 ips ; 30 to 22,000 Hz (±3 dB) at 3-3/4 ips using Akai Super Range Tape 30 to 24,000 Hz (±3 dB) at 7-1/2 ips ; 30 to 19,000 Hz (±3 dB) at 3-3/4 ips using standard tape
Distortion	Less than 1.5% (1000 Hz "O" VU)
Output Power	30 W total music power (15 W/15 W) at 8 Ω (GX-280 only) 20 W continuous power (10 W/10 W) at 8 Ω (GX-280 only)
Signal to Noise Ratio	Better than 50 dB
Erase Ratio	Better than 70 dB
Cross-Talk	Better than 70 dB (monaural) Better than 50 dB (stereo)
Bias Frequency	100 kHz
Heads	3 Heads : 4-track stereo/monaural Glass & Crystal Ferrite recording and playback heads ; 4-track erase head
Motors	3 Motors : Outer-rotor 2-speed motor with Servo-Control for direct capstan drive ; two 6-pole eddy-current outer-rotor motors for supply and take-up reel drive
Fast Forward & Rewind Time	75 seconds using a 1200 ft tape at 50 Hz ; 60 seconds using a 1200 ft tape at 60 IIz
Recording Capacity	2 hrs. stereo recording using a 1200 ft tape at 3-3/4 ips
Output Jacks	Line (2) : 1.23 V ("0" VU) / 100 Ω ; required load impedance : more than 20 kΩ Phone (1) : 30 to 40 mV/8 Ω Speaker (2) : 15 W/8 Ω each (GX-280 only)
Input Jacks	Microphone (2) : 0.8 mV/10 kΩ Line (2) : 150 mV/150 kΩ
Din Jack	0.4 V/50 mV (High), 5 mV (Low), 68 kΩ
Semi-Conductors	Transistors : 41 (GX-280D : 39) Diodes : 36 (GX-280D : 32)
Integrated Circuits	Power IC : 2 (GX-280 only) Linear IC : 2
Power Requirements	100 V to 240 V A.C., 50/60 Hz
Power Consumption	160 W (GX-280D : 130 W)
Dimensions	445(W) x 465(H) x 237(D) mm (17.8 x 18.6 x 9.5") 435(W) x 465(H) x 237(D) mm (GX-280D) (17.4 x 18.6 x 9.5")
Weight	23 kg. (51 lbs.) (GX-280D : 21 kg. (46 lbs.)

Specifications subject to change without notice.

STANDARD ACCESSORIES

Model GX-280

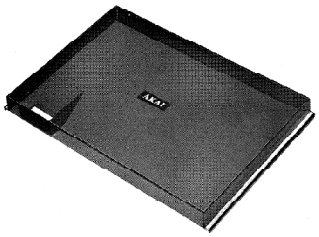
7″ Demonstration Tape	1
7″ Empty Metallic Reel	1
Sensing Tape	1
Spare Fuse	1 set
Operator's Manual	1

Model GX-280D

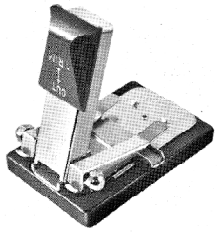
7″ Empty Metallic Reel	1
Connection Cord	1
Sensing Tape	1
Spare Fuse	1 set
Operator's Manual	1

OPTIONAL ACCESSORIES

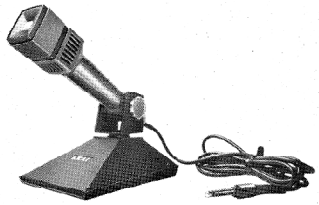
DUST COVER DC-250



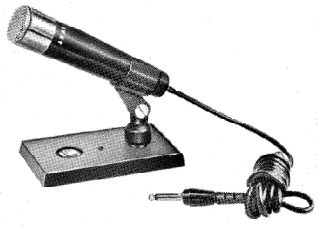
TAPE SPLICER AS-3



DYNAMIC MICROPHONES

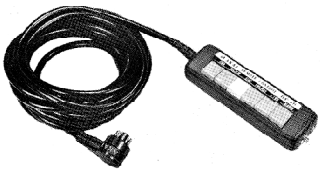


Uni-directional UM-101

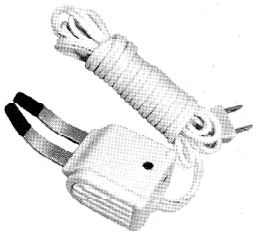


Non-directional DM-13

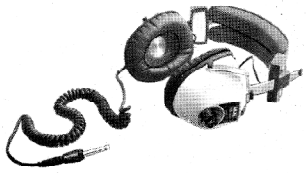
REMOTE CONTROL RC-16



HEAD DEMAGNETIZER AH-8



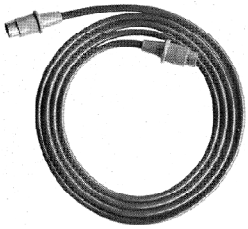
STEREO HEADPHONES



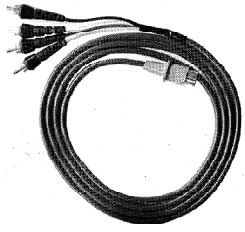
ASE-22

ASE-20

CONNECTION CORDS

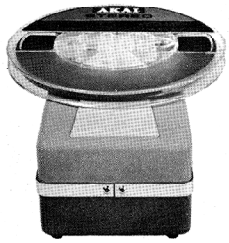


D-100



DR-110

TAPE ERASER ATE-7



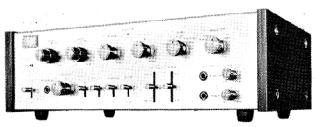
STEREO AMPLIFIERS AA-8500

FM/AM Mpx Stereo Amplifier

AA-6600

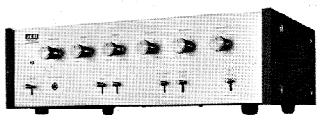
FM/AM Mpx Stereo Amplifier

AA-5800



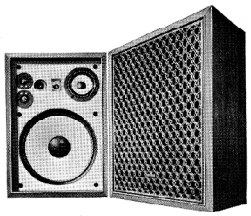
Stereo Pre-Main Amplifier

AA-5500



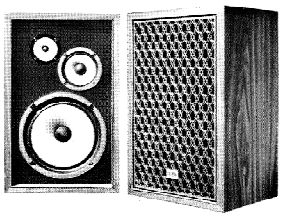
Stereo Pre-Main Amplifier

SPEAKER SYSTEMS SW-175



5-Way 6-Speaker System

SW-155



4-Way 4-Speaker System

MANUFACTURED & DISTRIBUTED BY
AKAI ELECTRIC CO., LTD.
AKAI TRADING CO., LTD.
12-14, 2-chome, Higashi-Kojiya,
Ohta-ku, Tokyo, Japan

Price US $ 1.50

4

PRINTED IN JAPAN